Email: thomson@hep.phy.cam.ac.uk & jamesb@fnal.gov

7th February 2017

Dear Milind,

The DUNE collaboration is aiming to produce Technical Design Reports for the first two Far Detector (FD) modules by 2019 and for the Near Detector (ND) by 2020. By these times we will need to have identified the likely funding models for the DUNE construction phase. To meet this goal, we are initiating a process to identify the international consortia of institutions that ultimately will take responsibility for the construction of the DUNE detector sub-systems.

To start this process, we are calling for "expressions of interest" in: i) the DUNE **far detector construction consortia**; ii) the DUNE **near detector concept** study; iii) forming part of the team for DUNE **core computing**; and iv) potential contributions to the **LBNF neutrino beam**. An expression of interest implies a desire to participate. More details, including the planned timeline, can be found in **dune-doc-2137**.

i) Far Detector Consortia

DUNE is planning for there to be one or more single-phase far detector modules and one or more dual-phase far detector modules. Based on this goal, DUNE intends to produce two FD TDRs in 2019 (single-phase and dual-phase). At this time, we are requesting expressions of interest in the single-phase FD sub-systems. The EoI for the dual-phase consortia will follow shortly. Five single-phase sub-system consortia are planned:

- *Anode Plane Assemblies (APAs);*
- *Cathode Plane/High Voltage Feedthrough/Field Cage (CPA/HV/FC);*
- *Electronics:* from the front end to the warm interface;
- *Data Acquisition (DAQ):* from warm interface to offline storage;
- *Photon Detection System (PDS):* including electronics read out.

Please note:

- Forming the consortia will be an iterative process that will take approximately six months.
- One objective in forming the FD consortia is to enable all nations/national groupings to participate in the FD construction by taking responsibility for an identified element of the scope covered by a consortium, whether it be large or small.

- There will be an open discussion of the possible division of responsibilities within each consortium once the interested parties have been identified.
- Joining a consortium does not imply having funding in place; the aim is to have converged on a funding model by 2019.
- There will be opportunities for institutions to join the consortia at a later stage.

ii) Near Detector Concept Study

We are calling for expressions of interest from institutions wishing to participate in the DUNE Near Detector Concept Study, with the aim of agreeing on a concept for the DUNE ND by the end of 2017. This could be the existing Fine-Grained Tracker concept, a Liquid Argon TPC, a system based around high-pressure gaseous argon TPC, or a hybrid system. We encourage institutions with an interest in the near detector to participate in this study.

iii) DUNE Computing Group/Consortium

We aim to increase the involvement of the collaboration in the definition and implementation of the DUNE core computing activities. If there are individuals at your institution with the expertise to work on specific deliverables as part of the DUNE Computing Group/Consortium, please let us know in your EoI response.

iv) LBNF Neutrino Beamline and Target/Horn

If your group has an interest in contributing to LBNF, either the beam line or target/horn system, please let us know in your EoI response.

What Happens Next?

This EoI call is a major step in the evolution of the DUNE collaboration, so please carefully consider how your institution can fit into the longer-term construction phase. The construction of the DUNE far and near detectors will take place during the first half of the next decade and we need to identify resources for the first two far detector modules by 2019, other commitments can be made later. Please read dune-doc-2137 for more details.

At this stage, we are primarily gathering information, so please fill out the simple checkbox form for EoI responses. Responses from single institutions or from groups of institutions (e.g. along national/funding agency lines) would be equally welcome. Please return the completed form to maxine@fnal.gov.

If you have any questions, please do not hesitate to contact us. Over the course of the next four weeks we will endeavor to speak to all IB representatives, either individually or in larger groups.

Yours sincerely,

Mark Thomson (DUNE Co-spokesperson) and Eric James (DUNE Technical Coordinator)